WHAT IS CLAIMED IS:

1. A lens having a radius $R_1 + R_2$, comprising a lens body having a radius $R_1$ and a radial outwardly extending flat flange portion having a radius $R_2$, wherein the ratio of $R_1/R_2$ is chosen such that the heat transfer is optimized.

2. The lens of Claim 1, wherein the ratio $R_1/R_2$ ranges from about 10 to about 1.

3. The lens of Claim 2, wherein the ratio $R_1/R_2$ ranges from about 5 to about 1.

4. The lens of Claim 3, wherein the ratio $R_1/R_2$ ranges from about 3 to about 1.

5. The lens of Claim 1, wherein the lens is made of zinc selenide or gallium arsenide.

6. The lens of Claim 5, wherein the lens is made of zinc selenide.

7. The lens of Claim 1, wherein the lens is coated with thorium fluoride and zinc selenide, or barium fluoride and zinc selenide.

8. The lens of Claim 1, wherein the lens is mounted in a lens mounting assembly.

9. A method of optimizing heat transfer in a lens, comprising:

using a lens with a radius $R_1 + R_2$, wherein the lens comprises a lens body having a radius $R_1$ and a radial outwardly extending flat flange portion having a radius $R_2$, and wherein the ratio of $R_1/R_2$ is chosen such that the heat transfer is optimized.

10. A laser material processing system, comprising a lens having a radius $R_1 + R_2$, the lens comprising a lens body having a radius $R_1$ and a radial outwardly extending flat flange portion having a radius $R_2$, wherein the ratio of $R_1/R_2$ is chosen such that the heat transfer is optimized.

11. The system of Claim 10, wherein the ratio $R_1/R_2$ ranges from about 10 to about 1.

12. The system of Claim 11, wherein the ratio $R_1/R_2$ ranges from about 5 to about 1.

13. The system of Claim 12, wherein the ratio $R_1/R_2$ ranges from about 3 to about 1.

14. The system of Claim 10, wherein the lens is made of zinc selenide or gallium arsenide.

15. The system of Claim 14, wherein the lens is made of zinc selenide.

16. The system of Claim 10, wherein the lens is coated with thorium fluoride and zinc selenide, or barium fluoride and zinc selenide.

17. The system of Claim 10, wherein the lens is mounted in a lens mounting assembly.

18. A method of optimizing heat transfer during laser material processing applications, comprising:

emitting a beam from a laser; and

using a lens having a radius $R_1 + R_2$, the lens comprising a lens body having a radius $R_1$ and a radial outwardly extending flat flange portion having a radius $R_2$, wherein the ratio of $R_1/R_2$ is chosen such that the heat caused by the laser beam is optimally transferred.

19. The method of Claim 18, wherein the ratio $R_1/R_2$ ranges from about 10 to about 1.

20. The method of Claim 19, wherein the ratio $R_1/R_2$ ranges from about 5 to about 1.

21. The method of Claim 20, wherein the ratio $R_1/R_2$ ranges from about 3 to about 1.

22. The method of Claim 18, wherein the lens is made of zinc selenide or gallium arsenide.

23. The method of Claim 22, wherein the lens is made of zinc selenide.

24. The method of Claim 18, wherein the lens is coated with thorium fluoride and zinc selenide, or barium fluoride and zinc selenide.

25. The method of Claim 18, wherein the lens is mounted in a lens mounting assembly.

26. A method of making a lens with optimized heat transfer properties using diamond turning techniques, wherein the lens has a radius $R_1 + R_2$ and comprises a lens body having a radius $R_1$ and a radial outwardly extending flat flange portion having a radius $R_2$, wherein the ratio of $R_1/R_2$ is chosen such that the heat transfer is optimized.

27. The system of Claim 10, further comprising a laser emitting a beam toward the lens.

28. The system of Claim 10, wherein the laser material processing system is one of: cutting, welding, heat treating, scribing, and selective removal.

29. The system of Claim 27, wherein the laser is one of: a carbon dioxide laser; an erbium, chromium, yttrium, scandium, gallium garnet (Er, Cr:YSGG) laser; an erbium, yttrium, aluminum garnet (Er:YAG) laser; an erbium, yttrium, scandium, gallium garnet (Er:YSGG) laser; a chromium, thulium, erbium, yttrium, aluminum garnet (CTE:YAG) laser, an erbium, yttrium orthoaluminate (Er:YAL03) laser; an argon fluoride (ArF) excimer laser; a xenon chloride (XeCl) excimer laser; a krypton fluoride (KrF) excimer laser; a neodymium doped yttrium aluminum garnet (Nd:Yag) laser; a quadrupled neodymium, yttrium, aluminum garnet (quadrupled Nd:YAG) laser; a holmium doped yttrium aluminum garnet (Ho:Yag) laser; an erbium doped yttrium aluminum garnet laser; a potassium titanyl phosphate (KTP) laser; and a Dye, Alexandrite, Ruby, and Diode laser.

30. The system of Claim 10, further comprising a lens-matched compression ring and a threaded retaining ring, wherein the lens is mounted between the lens-matched compression ring and the threaded retaining ring.

31. The system of Claim 30, wherein the lens further comprises a conic surface proximal to the flat flange portion and in contact with the lens-matched compression ring.